

REMARKS/ARGUMENT

The drawings were objected to in Figure 1. Replacement Figure 1 is submitted herewith, labeled as "Prior Art", and deleting the reference characters d, 7', and 10. Therefore, the objection to the drawings should be withdrawn.

The Abstract was objected to. Enclosed with this Amendment and Response is revised Abstract. Therefore, the objection to the Abstract should be withdrawn.

The Examiner made a number of rejections under §112. Each of the claims have been amended to address the Examiner's concerns. Therefore, the rejection under §112 should be withdrawn.

Claims 1-7 and 10-14 were rejected under §103 as being unpatentable over a combination of references including Battigelli et al, Erskine, Bernard et al, and Vignesoult et al.

The present invention relates to clamping felts or clamping sheets. Clamping felts of various types are known in the art, such as those disclosed in the U.S. Patent No. 4,866,905. Clamping felts have become more popular in the industry, and the market share for these clamping felts has consistently increased over the years.

The essential difference between insulation elements prepared and made as clamping felts and conventional insulation elements with the same density is that the structure of the clamping felt is stiffer, and if compressed, then the restraining forces are generated within the clamping felt such that the clamping felt when inserted in its compressed condition between a pair of rafters, then decompresses such that there is no requirement to have additional fasteners. The '905 patent however requires additional fastening.

It is an object of the present invention to improve mineral fiber elements by providing a lower fire load between the beams, i.e., a lower absolute binding agent content without affecting the demands of fire protection and clamping behavior. This object is achieved by providing an insulation material element that features a fiber structure having an average geometric fiber diameter of less than or equal to 4 micrometers, a gross density in the range of 8 to 25 kilograms per cubic meter and a portion of the binding agent referred to as a fiber mass of the insulation material element in the general range of 4 percent to 5 percent by weight.

A combination of these features provide an invention that is not taught by the prior art. Even if it were known to provide each of these parameters separately, there is no disclosure in the prior art that each of these features should be combined with one another to produce the present invention.

It is believed that the most potentially relevant prior art cited by the Examiner is the U.S. Patent to Vignesoult et al. Vignesoult et al attempts to combine the advantages of rock wall and glass wall in order to create a mineral wall of biosoluable nature with an ability to be rapidly dissolved in a physiological medium as to prevent any potential pathogenic risk associated with the possible accumulation of finest fibers in the body by inhalation. This reference however does not disclose mineral wool elements of the clamping felt type and does not provide a clamping felt made of mineral wool. The binding agent content is not disclosed in this reference. This reference also fails to disclose the geometric fiber diameter of less than or equal to 4 micrometers and does not disclose the gross density in the claimed range. The Bernard et al reference and Battigelli et al reference are prior art documents having almost the same content as Vignesoult et al. Therefore, the combination of these references essentially fails to disclose the combination of features recited in Claim 1.

With respect to Bernard et al, it describes features of rock wall produced by internal centrifuging. In the Bernard et al reference, the fibers are indicated with a micronaire valve. The micronaire value is a measure for the fineness of the fibers. To measure the micronaire value, the fibers are pressed together to reference pressure of the package and are exposed to an air current. The outlet of air measures the micronaire value. Therefore, a small micronaire value does not enforce a small gross density, (which is mass by volume) of the insulation material element. In Bernard et al, a micronaire value of 3 is reached. It is respectfully submitted that this does not mean that the mineral wool has a gross density in the range of 8 to 25 kilograms per meter cubed as viewed by the Examiner. Bernard et al is also deficient with respect to the other features of claim 1 to include the form of the insulation material, (rolled up as a roll or separable into insulation material plates), nor the possibility for clamping the insulation material between beams. Bernard et al fails to disclose any percentage of binding agents, and does not disclose that it is soluble. Therefore, even in reviewing the Bernard et al and Battigelli et al references, it

cannot be found that these references obviate the present invention. As to the combination of Bernard et al and Vignesoult et al, there are also other deficiencies noting the inability to be clamped between beams and the content of the binding agent.

The Erskine reference discloses a method for reusing excess rock wall. The solution in this reference is to grind the rock wall into finely divided particles, to mix cellulous fibers or fibers of organic waste to serve as a binding agent, to compress the mixture as so to form a conglomerate thereof and to shape and size a conglomerate of material into blocks. Erskine does not address clamping felts as claimed by the present invention. The material content is not given in Erskine, nor is the mean geometrical fiber diameter. One skilled in the art would not think to combine the Erskine reference with the features of clamping felts. The Erskine reference is not directed to objects of the invention such as fire protection and clamping behavior. Therefore, it is not obvious that Erskine should be combined with the other references. Therefore, this rejection should be withdrawn.

Claim 8 was rejected under §103 as being unpatentable over Battigelli et al in view of Erskine, Bernard et al, Vignesoult et al and further in view of Syme et al. Syme et al fails to cure the deficiencies in the other references. Therefore, this rejection should be withdrawn.

Claims 9 and 15 were rejected under §103 as being unpatentable over Battigelli et al in view of Erskine and Bernard et al, and further in view of Bihi. Bihi also fails to cure the deficiencies in the prior references. Therefore, this rejection should be withdrawn.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,
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